CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES

2.1 INTRODUCTION

There are five alternatives considered and analyzed in this document. Alternative 1 consists of the standards and guidelines developed by the three Resource Advisory Councils (RACs) for their representative areas. Alternative 2 consists of the state-wide standards developed by BLM, in consultation with representatives from each of the RACs, but without concurrence by the entire RAC membership. The guidelines for Alternative 2 are essentially the same as those for Alternative 1. Alternative 3 is adoption of the national "fall-back" standards and guidelines listed in the regulations. Alternative 4 is a rapid improvement or rapid recovery alternative developed by BLM, with suggestions from several interest groups. The Standards in Alternative 4 are the same as those in Alternative 2, except for Water Quality. These four alternatives are the same as those found in the Draft EIS.

Alternative 5, the preferred alternative or proposed action, is a modified version of Alternative 1, with changes based upon suggestions and new information from the public, the RACs and BLM.

A "no action" alternative consisting of the previous (prior to the new regulations) grazing management was considered and dropped. This is not a viable alternative because the new grazing regulations include a mandatory set of "fall-back" standards and guidelines. As the BLM did not develop and implement state or regional standards and guidelines by August 12, 1997, the "fall-back" standards and guidelines are in effect until state or regional standards and guidelines are developed. Therefore, the application of the fallback standards and guidelines is the current "no action" alternative.

A "rapid recovery" alternative submitted by the California Native Plant Society was considered and dropped. This was not considered a viable alternative because of several provisions within the proposal that are contrary to law or regulation, or are arbitrary (see the comments section in Chapter 5 for further analysis). However, portions of this proposal were used to formulate Alternative 4.

2.2 PLAN AMENDMENTS

In accordance with the range regulations at 43 CFR 4100, existing land use plans (Resource Management Plans, Management Framework Plans, and special plans such as PACFISH) have been examined to determine their compliance with the new regulations and the principles of rangeland health. In most cases, these plans do comply.

These existing land use plans will be amended to include the standards and guidelines that are adopted through this EIS. Where there are plan decisions that are contrary to the new regulations and the principles of rangeland health, those decisions will be removed from the plans or amended to comply. A complete list of the affected plans is in Appendix 4; a statement of the plan maintenance to be completed is in the Implementation Plan in Appendix 21. Allotment management plans and other activity plans will also be amended as necessary to comply with these standards and guidelines.

Where "desired plant community" (DPC) objectives have been determined through the BLM planning and NEPA processes, the DPCs will be evaluated to ensure that they meet the standards of rangeland health. Where DPCs have not yet been determined for a pasture or allotment, they will be developed through the BLM planning and NEPA processes to meet local and regional management objectives, and will meet the standards of rangeland health.

2.3 WATER QUALITY -- BEST MANAGEMENT PRACTICES

To meet the requirements of the Clean Water Act, BLM is currently developing a state-wide water quality management plan under an MOU with the California Water Resources Control Board. This water quality management plan would designate BLM as being responsible for water quality issues on those public lands managed by BLM. As part of the water quality plan, we are required to submit a list of Best Management Practices (BMPs) to the State and to the U.S. Environmental Protection Agency for their approval. Appendix 10 contains the proposed best management practices. One of the decisions of this document will be to finalize the list of best management practices so that it may be submitted for approval.

2.4 IMPLEMENTATION

It is BLM's intent to fully implement the grazing standards and guidelines as directed in the recent rulemaking. The rule states that, "The authorized officer shall take appropriate action as soon as practicable but not later than the start of the next grazing year upon determining that grazing practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform to the guidelines . . . ." (43 CFR 4180.2 (c)). Determination of the "appropriate action," and the actual scheduling of the implementation, will be the responsibility of the local Field Managers.

The implementation process will follow four basic steps, including an initial screening, management change, monitoring, and additional inventory or assessment.

Screening

BLM will classify each allotment or manageable grazing unit into one of four categories, based upon available data and the professional judgement of the staff. These are:

1. Areas where one or more standards are not being met, or significant progress is not being made toward meeting the standard(s), and livestock grazing is a significant contributor to the problem;

2. Areas where all standards are being met, or significant progress is being made toward meeting the standard(s);

3. Areas where the status for one or more standards is not known, or the cause of the failure to not meet the standard(s) is not known;

4. Areas where one or more standards are not being met, or significant progress is not being made toward meeting the standard(s), but some factor other than livestock grazing is the primary contributor to the problem.

Management Change

For allotments or manageable grazing units in Category 1 above:

1. Prioritize the areas based upon ecosystem position, resource risk, biological values, legal requirements, and social / economic considerations.

2. Using the NEPA process and the guidelines, make a decision of what the appropriate grazing management changes should be.

3. Implement the management change(s).

For allotments or manageable grazing units in Category 4 above:

1. Prioritize the areas based upon ecosystem position, resource risk, biological values, legal requirements, physical ability to affect change, and costs to implement.

2. Using the NEPA process, make a decision of what the appropriate corrective action(s) (under current regulation and policy) should be.

3. Implement the corrective action(s) as priorities, practicality and funding allow.

Monitoring

1. For allotments or manageable grazing units in Category 2 above:

   Monitor these areas to ensure that they continue to meet the standards or make significant progress toward meeting the standards.

2. For allotments or manageable grazing units in Category 1 above:

   Monitor these areas to ensure that the management changes are made, and that they are resulting in the area meeting the standards or making significant progress toward meeting the standards.

3. For allotments or manageable grazing units in Category 4 above:

   Monitor these areas to ensure that the corrective actions are taken, and that they are resulting in the area meeting the standards or making significant progress toward meeting the standards.

Inventory and Assessment

For allotments or manageable grazing units in Category 3 above:

1. Prioritize the areas based upon ecosystem position, resource risk, biological values, legal requirements, and social / economic considerations.

2. Conduct riparian / wetland and/or upland functional assessment inventories to determine conditions in relationship to the standards.

3. Conduct evaluations to determine livestock cause and effect relationships.

4. Re-classify as Category 1, 2, or 4, then Implement Management Change, Corrective Action and Monitoring actions as appropriate.

Prioritization

Under current funding levels, it will not be possible to complete assessments of rangeland health on all public rangelands and to take appropriate corrective action immediately upon the standards and guidelines taking effect. This was recognized in the preamble to the final rulemaking where it states that, "the Department recognizes that it is not possible to complete all assessments of rangeland health and take appropriate corrective action . . . immediately upon completion of the State or regional standards and guidelines. The Department intends that assessments and corrective actions will be undertaken in priority order as determined by BLM." (Federal Register, Vol. 60, No. 35, 2/22/95, page 9956)

There are allotments and grazing units where BLM knows there are problems directly attributable to grazing, but no management actions have been taken. These areas will fall into Category 1. Some of the areas with known problems have already had management actions implemented. Dependent upon the success of the actions, these would fall into Category 1, requiring additional actions, Category 2, or Category 3.

Priorities for assessments and for corrective actions will be determined by the BLM, dependent upon a number of factors. These include, but are not limited to:

1. the severity of resource impacts resulting from non-achievement of the standard and conformance with the guidelines;
2. the anticipated cooperation of the permittee/lessee;
3. the return on investment in any corrective action;
4. the size of the affected area;
5. legal mandates;
6. the ability to arrest further degradation;
7. the proportion of Federal land in the allotment; and,
8. any pending administrative actions, i.e. renewal, transfer, etc.

Priorities will also depend upon the characteristics of the landscapes involved, and their potential for improvement -- as an example, if an area is severely degraded or has passed a threshold and there seems little or no chance for recovery because the recovery capability of the site has been lost.

Focusing limited BLM resources on low priority areas at the expense of postponing assessment and needed action on higher priority areas is not in the best interest of sound rangeland management. Therefore, the authorized officer must consider the expected return to the public in setting priorities and deciding what constitutes an appropriate action. All such decisions will have a sound, rational basis, and be well documented.

Currently each Field Office in California maintains a prioritization of management needs and emphasis for each grazing allotment based on a Bureau-wide system established in the early

1980's, commonly called the I,M,C system. This system of identification may still continue to be appropriate, providing that rangeland health status and needs are also included in the criteria for prioritization; or it may change. Appendix 5 identifies the number of allotments under current prioritization categorization criteria for each of the Field Offices, as well as a description of the categories.

Appendix 6 is a flow chart showing the general implementation process.

Appendix 21 shows which allotments managed by each Field Office are in each category.

2.5 ALTERNATIVE 1: STANDARDS & GUIDELINES ORIGINALLY PROPOSED BY THE RESOURCE ADVISORY COUNCILS

This alterative includes three sets of proposed rangeland standards and guidelines, one for each of the RAC areas -- Bakersfield, Ukiah and Susanville. Each RAC worked with local interests, and knowledgeable BLM staff to develop standards and guidelines that would meet the needs of their area.

2.51 BAKERSFIELD RAC RECOMMENDED STANDARDS AND GUIDELINES

Standards and Guidelines for Rangeland Health in The Bakersfield District

Preamble

The standards for rangeland health and guidelines for livestock management on Bureau of Land Management lands are written to accomplish the four fundamentals of rangeland health, insofar as the standards are affected by livestock grazing practices. Those fundamentals are:

A. Watersheds are properly functioning;
B. Ecological processes are in order;
C. Water Quality complies with State standards; and,
D. Habitats of protected species are in order.

A " standard " serves as the criterion to determine if management actions are resulting in the maintenance or attainment of healthy rangelands per the four fundamentals of rangeland health. Standards are expressions of physical and biological conditions or degree of function required for healthy, sustainable rangelands. " Guidelines " serve as the vehicle to implement management actions related to livestock grazing to accomplish rangeland health standards. Guidelines will indicate the types of grazing methods and practices determined to be appropriate to ensure that standards can be met. The public should be an active participant in the application of these standards and guidelines.

Standards and guidelines will apply to all BLM lands within the geographic area for which they are written. Using the complete set of standards and guidelines, the local BLM range managers, in consultation with grazing permittees and other interested parties, will determine

"terms and conditions" for each grazing allotment. These terms and conditions are the specific grazing practices that are appropriate for that allotment.

BLM lands vary so greatly in topography, climate, soils, water availability, size and distribution of parcels, and other factors, that local managers must have the flexibility needed to determine which grazing practices will work best in each area, and to change those practices when necessary to achieve the desired rangeland conditions.

Where "desired plant community" (DPC) objectives have been determined through the BLM planning and NEPA processes, the DPCs will be a measure in meeting the standards of rangeland health. Where DPCs have not yet been determined for a pasture or allotment, they will be a measure in meeting the standards of rangeland health when they are approved through the BLM planning and NEPA processes.

The scientific evidence and collective knowledge of the public and rangeland managers shows a wide variety of grazing effects on plants, animals and watersheds. As a result, the application of these standards and guidelines will emphasize using the best available information for a site-specific situation, and the results of historical grazing patterns should be given significant weight in any decisions about grazing practices to be followed on BLM allotments. Where historical grazing use has been compatible with meeting the standards for soils, species, riparian areas or water quality, no permanent changes should be mandated in the existing grazing patterns without substantial scientific evidence that changing the existing grazing pattern will improve the ability to achieve the standards.

For any standard, guideline, term, or condition to work, it must be capable of being achieved, based on sound science or good common sense, and be measurable, understandable, and economically feasible. There is no use in setting standards that can not be met.

Successful application of these standards and guidelines will depend on BLM's capability to monitor rangeland conditions and implement management practices. Each Bureau office should develop a monitoring and implementation plan that sets priorities based on resource conditions, trends, and resource values.

BAKERSFIELD STANDARDS FOR RANGELAND HEALTH

STANDARD: SOILS

Soils exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form.

Meaning That:

Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.

As Indicated By:

* Ground cover (vegetation and other types of ground cover such as rock) is sufficient to protect sites from accelerated erosion.

* Litter/residual dry matter is evident, in sufficient amounts to protect the soil surface.

* A diversity of plant species, with a variety of root depths, is present and plants are vigorous during the growing season.

* There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface

* Biological (microphytic or cryptogamic) soil crusts are in place where appropriate.

STANDARD: SPECIES

Healthy, productive and diverse populations of native species, including special status species (Federal T&E, Federal proposed, Federal candidates, BLM sensitive, or Calif. State T&E) are maintained or enhanced where appropriate.

Meaning That:

Native and other desirable plant and animals are diverse, vigorous, able to reproduce and support the hydrologic cycle, nutrient cycles and energy flows over space and time.

As Indicated By:

* A variety of age classes are present for most perennial plant species.

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* The spatial distribution and cover of plant species and their habitats allows for reproduction and recovery from localized catastrophic events.

* A diversity of plant species with various phenological stages and rooting depths are present on sites where appropriate.

* Appropriate natural disturbances are evident.

* Levels of non-native plants and animals are at acceptable levels.

* Special status species present are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented.

* Where appropriate, species composition contributes to the desired plant community objectives.

* Noxious and invasive species are contained at acceptable levels.

STANDARD: RIPARIAN

Riparian/wetland vegetation, structure and diversity and stream channels and floodplains are, or are making significant progress toward, functioning properly and achieving an advanced ecological status.

Meaning That:

The vegetation and soils interact to capture and pass sediment, sustain infiltration, maintain the water table, stabilize the channel, sustain high water quality, and promote biodiversity appropriate to soils, climate, and landform.

As Indicated By:

Vegetation Attributes:

* Vegetation cover is greater than 80% or the percentage that will protect banks and dissipate energy during high flows.

* Age-class and structure of woody/riparian vegetation is diverse and appropriate for the site.

* Where appropriate, shading is sufficient to provide adequate thermal regulation for fish and other riparian dependent species.

* Where appropriate, there is adequate woody debris.

* A diversity of plant species with various phenological stages and rooting depths are present. Root masses are sufficient to stabilize stream banks and shorelines.

* Plant species present indicate that soil moisture characteristics are being maintained.

* There is minimal cover of invader/shallow-rooted species.

* Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

* Point bars are vegetated.

Physical Indicators:

* Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type (using D. Rosgen's Stream Classification System).

STANDARD: WATER QUALITY

Surface and groundwater quality complies with California, or other appropriate (e.g. Nevada or Tribal) water quality standards.

Meaning That:

BLM actions do not contribute to pollution that violates the quantitative or narrative standards of the California and Nevada water quality standards (WQS). Approved Best Management Practices (BMPs) are used to protect water quality or restore water quality to water bodies not fully supporting designated beneficial uses, e.g., water quality limited segments.

As Indicated By:

* Chemical constituents do not exceed the WQS.

* Water temperature does not exceed the WQS.

* Nutrient loads, fecal coliform, turbidity, and dissolved oxygen do not exceed the WQS.

* Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae and plants) indicate support for beneficial uses.

BAKERSFIELD RAC GUIDELINES FOR GRAZING MANAGEMENT:

Guideline 1: Livestock grazing operations will be conducted so that progress is made toward maintaining or promoting adequate amounts of vegetative ground cover, including standing plant material and litter to support infiltration, permeability, and maintain soil moisture storage and soil stability appropriate for the ecological sites within the management units. The ground cover should maintain soil organisms, plants, and animals to support the hydrologic and nutrient cycles, and energy flow.

Guideline 2: Implement grazing systems that regulate the timing and intensity of grazing. Continuous season-long grazing use is allowed if it has been demonstrated that it can be consistent with achieving a healthy, properly functioning ecosystem. Grazing systems should specify season of use based on plant phenology and geohydrologic processes where appropriate. On annual rangelands, mulch management should be used to define target forage use levels that will ensure that sufficient amounts of residual dry matter (RDM), or standing plant material will be maintained throughout the grazing season. Mulch levels for annual grasses should meet the requirements of Table A, whenever feasible. Mulch levels will include a "buffer" to account for RDM loss from other natural processes (decomposition,

animal use, etc.). Exceptions may be approved during the green season when substantial regrowth is expected or if lower RDM levels are required to meet particular rangeland health objectives, such as reducing competition for a desired species.

Guideline 3: Where appropriate, use grazing systems that maintain the presence and distribution of microsites for seed germination.

Guideline 4: Perennial plant utilization should be limited to appropriate levels of the current year's growth, unless it has been proven that this level of use is incompatible with the continued existence of the plant. (Table A)

Guideline 5: Annual range readiness will be determined by: 1) Minimum RDM levels at the time of turnout prior to green season growth are exceeded by 200 pounds per acre; or 2) Minimum RDM levels and at least 2 inches of new growth are present in the growing season.

Guideline 6: Implement grazing systems that permit existing native species to complete entire life cycles and sustain the spatial distribution of microsites necessary for seed germination at intervals sufficient to maintain the viability of the species.

Guideline 7: Use grazing systems that are compatible with the persistence of desired species. Grazing use should provide appropriate levels of plant matter that will promote the existence of desirable plants and animals.

Guideline 8: Native species are recommended for all revegetation and enhancement projects unless they are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

Guideline 9: Periods of rest from livestock grazing or other avoidable disturbances should be provided during/after episodic events (e.g. flood, fire, drought) and during critical times of plant growth needed to achieve proper functioning conditions, recovery of vegetation, or desired plant community.

Guideline 10: Grazing management practices will allow for the reproduction of species that will maintain riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge, streambank stability, the hydrologic cycle, nutrient cycle, and energy flow.

Guideline 11: Grazing practice should maintain a minimum herbage stubble height on all stream-side areas at the end of the grazing season (Table A). There should be sufficient residual stubble or regrowth at the end of the grazing season to meet the requirements of plant vigor maintenance, bank protection, and sediment entrapment.

Guideline 12: Water sources, wetlands and riparian areas may be fenced to reduce impacts from livestock.

Guideline 13: The development of water sources will maintain ecologic and hydrologic function and processes.

Guideline 14: Locate salt blocks and other supplemental feed well away from riparian/wetland areas.

Table A: Forage Utilization and Mulch Management Requirements				
Precipitation	Plant Community	Slope, Elevation	Minimum Residual Dry Matter* (lbs/ac)	Maximum Utilization of Key Perennials, #, ##
4-10 Inches	California annual grassland	<25% 25-45% >45%	200 250 350	25-40%
10-40 Inches	California annual grassland, Oak woodlands	<25% 25-45% >45% <15%, 1000-2500 >15%, >2500	400 600 800 700-900** 1000-1200**	30-45%
8-30 Inches	Sagebrush grassland, Pinyon-juniper woodland, Cool season pasture	NA	NA	30-40%
4-40 Inches	Riparian areas, wetlands	NA	4-6 inch stubble height #	35-45% herbs, 10-20% shrubs, 0-20% trees

* Minimum to be present at fall green/winter green-up.

** Higher minimum is for sites that are: in unsatisfactory condition, grazed during active growth, not rested, or on steeper slopes.

Stubble height and percent utilization levels are initial values that should be adjusted to consider timing of grazing use and plant phenology, resource conditions and a site's resiliency at the allotment, pasture or site-specific location. Perennial plant utilization levels and stubble heights are based on a literature review by Jerry L. Holechek, Policy Changes on Federal Rangelands: A Perspective, or A Wall Street Perspective on Management of Federal Rangelands. National Public Lands Advisory Council, November 19, 1991. Golden CO.

On sites in unsatisfactory condition and/or trend, perennial plant utilization should be no more than 15-25% current annual growth where less than one period of rest is provided per growing season of use.

Guideline 15: Locate new livestock handling and/or management facilities outside of riparian/wetland areas. For existing livestock handling facilities inside riparian area, ensure that facilities do not prevent attainment of standards. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of standards.

Guideline 16: Implement grazing systems that will promote compliance with the Water Quality Standards.

2.52 UKIAH RAC RECOMMENDED STANDARDS AND GUIDELINES

Standards and Guidelines for Rangeland Health in The Ukiah District

Preamble

The standards for rangeland health and guidelines for livestock grazing on BLM administered lands are written to accomplish the four fundamentals of rangeland health, insofar as they are affected by livestock grazing practices. These fundamentals are:

A. Watersheds are properly functioning;
B. Ecological processes are in order;
C. Water quality complies with state standards; and,
D. Habitats of protected species are in order.

Additionally, the standards and guidelines must be consistent with those of adopted regional conservation strategies which affect the Northwestern California public lands under the purview of the Ukiah Resource Advisory Council. The Northwest Forest Plan (NFP)(USDI, USDA, 1994) encompasses the entire range of the northern spotted owl and provides a set of land allocations and standards and guidelines for management activities. It contains both terrestrial and aquatic conservation strategies. Range management standards and guidelines are directed toward attainment of aquatic conservation strategy objectives through management of riparian reserves. The Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH) (USDI, USDA, 1995) extends riparian standards and guidelines as in the NFP to all anadromous watersheds beyond the range of the northern spotted owl.

The RAC and BLM staff reviewed these standards and guidelines during development of the Standards for Rangeland Health and Guidelines for Livestock Grazing to ensure that the Aquatic Conservation Strategy objectives of the NFP and Riparian Management Objectives of PACFISH were consistent, and that the standards and guidelines were consistent with the BLM's Redding and Arcata Resource Management Plans.

A "standard" serves as the criterion to determine if management actions are resulting in the maintenance or attainment of healthy rangelands per the four fundamentals of rangeland health. Standards are expressions of physical and biological conditions or degree of function required for healthy sustainable rangelands. Guidelines serve as the vehicle to implement management actions related to livestock grazing to accomplish the rangeland health standards. Guidelines will indicate the types of grazing methods and practices determined to be appropriate to ensure that the standards can be met.

Standards and guidelines will apply to all BLM lands within the geographic area for which they are written. Using the standards and guidelines, the local BLM managers, in consultation with grazing permittees and other interested parties, will determine terms and conditions for each grazing allotment. These terms and conditions are the specific grazing practices that are appropriate for that allotment.

BLM lands vary so greatly in topography, climate, soils, water availability, size and distribution of parcels and other factors that the local managers must have the flexibility needed to determine which grazing practices will work best in each area, and to change those practices when necessary to achieve the desired rangeland conditions.

Where desired plant community (DPC) objectives have ben determined through the BLM planning and NEPA processes, the DPCs will be a measure in meeting the standards of rangeland health.

Where historical grazing has been compatible with meeting the standards for soils, species, riparian areas or water quality, no permanent changes should be mandated in the existing grazing patterns without substantial scientific evidence that changing the grazing pattern will improve the ability to achieve the standards.

For any standard, guideline, term or condition to work, it must be capable of being achieved, based on sound science or good common sense, and be measurable, understandable, and economically feasible. There is no use in setting standards that cannot be met.

UKIAH STANDARDS FOR HEALTHY RANGELANDS

STANDARD: SOILS

Soils exhibit characteristics of infiltration, fertility, permeability rates and other functional biological and physical characteristics that are appropriate to soil type, climate, desired plant community, and land form.

Meaning That:

Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.

As Indicated By:

* Ground cover (vegetation and other types of ground cover such as rock) sufficient to protect sites from accelerated erosion.

* Litter/residual dry matter evident, accumulating in place, and showing negligible movement by water.

* A diversity of plant species, including native plants, with a variety of root depths, is present and plants are vigorous during the growing season. (Rangeland Health, National Research Council, 1994, page 130, table 4-8).

* There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface.

* Biological (microphytic or cryptogamic) soil crusts, if present, are intact.

STANDARD: SPECIES

Healthy, productive, and diverse populations of native plant and animal species, particularly special status species, are maintained and/or being restored.

Meaning That:

As Stated.

As Indicated By:

* A variety of age classes are present for desired plant species (Rangeland Health, National Research Council 1994, page 130 table 4-8).

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* The spatial distribution of plant and animal species and their habitats allows for reproduction and recovery from localized catastrophic events.

* A diversity of plant species with various developmental stages and rooting depths are present to extend the photosynthetic period and increase energy capture.

* Evidence of beneficial natural disturbances.

* Non-native, noxious and invasive species are at acceptable levels.

* Special status species and other local species of concern are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and support nutrient cycling.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented.

* Species composition contributes to the desired plant community objectives.

STANDARD: RIPARIAN

Riparian/wetland vegetation, structure and diversity, and stream channels and floodplains are, or are making significant progress toward functioning properly and achieving late seral stages.

Meaning That:

The vegetation and soils interact to capture and pass sediment, sustain infiltration, maintain the water table, stabilize the channel, sustain high water quality, and promote biodiversity appropriate to soils, climate, and landform.

As Indicated By:

* Naturally occurring vegetation cover will protect banks and dissipate energy during high flows.

* Age-class and structure of woody/riparian vegetation is diverse and appropriate for the site. Recruitment of preferred species is adequate for sustaining the community.

* Where appropriate, habitat is sufficient to provide for plant and animal riparian dependent species. There is diversity and abundance of insects and amphibians.

* Where appropriate, there is adequate woody debris.

* A diversity of plant species with various developmental stages and rooting depths is present (Rangeland Health, National Research Council 1994, page 112, and table 4-8 on page 130). Root masses are sufficient to stabilize stream banks and shorelines.

* Plant species present indicate that soil moisture characteristics are being maintained.

* Shallow-rooted, invader plant species are not displacing native species.

* Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition (Rangeland Health, National Research Council 1994, page 130, table 4-8).

* Point bars are becoming vegetated over time.

* Adequate stream bank stability, morphology, pool frequency, stream width depth ratio, and minimal substrate sediments and bare ground.

Exceptions and exemptions from riparian standard, where the standard may not be applicable:

Structural facilities constructed for livestock/wildlife water or other purposes which are not natural wetland and/or riparian areas. Examples are: water troughs, stockponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD: WATER QUALITY

With the exception of off-stream artificial impoundments, surface and groundwater quality complies with California, Tribal and Federal water quality standards (WQS).

Meaning That:

BLM actions do not contribute to pollution that violates the quantitative or narrative standards of the California water quality standards (WQS)). Approved Best Management Practices (BMPs) are used to protect water quality or restore water quality to water bodies not fully supporting designated beneficial uses, e.g. water quality limited segments.

As Indicated By:

* Chemical constituents, water temperature, nutrient loads, fecal coliform, and turbidity do not exceed WQS.

* Dissolved oxygen levels, and aquatic organisms and plants (e.g., macroinvertebrates, fish, and algae) indicate support for beneficial uses.

UKIAH GUIDELINES FOR LIVESTOCK MANAGEMENT

RIPARIAN HABITATS

Guideline 1: Management for riparian dependent special status species, where they occur, is primary.

Guideline 2: Season of use should be short term and allow for plant regrowth and reproduction. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirement of plant vigor maintenance, plant and wildlife habitat, stream shading, bank protection and sediment entrapment. Specific grazing dates will be set in lease terms and conditions.

Guideline 3: Locate salt blocks and supplemental feed well away from riparian zones.

Guideline 4: Locate all livestock handling and management facilities outside of riparian areas.

Guideline 5: Limit livestock trailing and watering to those areas and times that will not retard or prevent attainment of standards. Avoid trailing in vernal pools and wetlands whenever possible.

Guideline 6: Make temporary changes to livestock grazing management practices, including increases or decreases in stocking rates and seasons of use in response to important episodic events (drought, flood, fire, good germination, etc.).

Guideline 7: Degraded riparian areas may require complete rest or other change in management practices to initiate the recovery process.

Guideline 8: Limit or exclude livestock grazing in identified culturally sensitive areas where grazing is detrimental to such sites.

Guideline 9: BLM will work with livestock grazing lessees to utilize prescribed fire, fencing, rest-rotation, holistic resource management, integrated pest management, and other innovative management practices where appropriate to protect riparian health.

Guideline 10: Native species are recommended for all revegetation and enhancement projects unless they are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions or biological health.

GUIDELINES FOR ANNUAL UPLANDS

TABLE B: Residual Dry Matter (RDM) Guidelines.
Definition is pounds/acre by slope and precipitation.

Precipitation	Slope 0-25%	Slope 26-45%	Slope 46% and Up
10" - 40"	500 lbs.	600 lbs.	800 lbs.
40" - 60"	750 lbs.	1,000 lbs.	1,250 lbs.
60+"	1,000 lbs.	1,500 lbs.	2,000 lbs.

Annual Upland Rangelands

Guideline 11: If necessary to meet desired plant community (DPC), or if there is a probability to promote or enhance native perennial plant communities (including special status plants) to check degradation, then adjust grazing management practices, such as: season of use, RDM, stocking level, distribution, pasture rotation, or other range management practices.

Guideline 12: Continuous season-long grazing is allowed if it has been demonstrated that it can be consistent with achieving a healthy, properly functioning ecosystem.

Guideline 13: Alter livestock grazing or initiate erosion control practices in areas where soil is compacted or prone to accelerated erosion.

Guideline 14: BLM will work with livestock grazing lessees to utilize prescribed fire, fencing, rest-rotation, holistic resource management, integrated pest management, and other innovative management practices where appropriate.

Guideline 15: Make temporary changes to livestock grazing management practices, including increases or decreases in stocking rates and seasons of use in response to important episodic events (drought, flood, fire, good germination, etc.).

Guideline 16: Limit or exclude livestock grazing in identified culturally sensitive areas where grazing is detrimental to such sites.

Guideline 17: Degraded areas may require complete rest or other change in management practices to initiate the recovery process.

Guideline 18: The plan for grazing an any allotment must consider other uses (recreation, wildlife, mineral resource development, etc.) and be coordinated with other users of the public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 19: Encourage grazing management practices that sustain biological diversity across the landscape by providing a mosaic of seral stages and vegetation corridors, and minimizing habitat fragmentation.

Guideline 20: Implement aggressive action to reduce the invasion of exotic plant species into native plant communities. Control the spread of noxious weeds through various methods such as grazing management, fire management, and other vegetative management practices.

Guideline 21: Utilize prescribed fire and natural prescribed fire to promote a broad vegetative diversity of healthy plant communities, while creating a mosaic network of interconnected vegetative resources.

Guideline 22: Native species are recommended for all revegetation and enhancement projects unless they are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions of biological health.

Perennial Rangeland Guidelines

Guideline 23: No authorized livestock grazing in new allotments which are native perennial grasslands until guidelines specific to these perennial species are developed and adopted.

2.53 SUSANVILLE RAC RECOMMENDED STANDARDS AND GUIDELINES

Standards for Rangeland Health and Guidelines for Livestock Grazing
Susanville Resource Advisory Council

Preamble

Healthy Rangelands contribute to the social and economic well being of rural communities in Northeastern California and Northwestern Nevada, and they provide, over the long term, the most reliable harvest of rangeland resources. The objective of rangeland resource planning is to integrate BLM resources with other resources to achieve the mandate of multiple-use and sustained yield management of renewable resources in an environmentally sound and cost effective manner.

The **Standards** of rangeland health are expressions of physical and biological condition or degree of function required for healthy, sustainable rangelands. The Standards are applied on a landscape scale. Some standards may not apply to all acres. For example, a mosaic of vegetation types and age classes may produce the diversity associated with healthy rangelands; however, some individual vegetation communities within the mosaic may lack diversity.

The Standards always relate to the capability or potential of a specific site. The land will not be expected to produce vegetation or support habitats not attainable due to climate, soils or other limiting attributes. In instances where site capability or potential has changed due to man-caused or natural disturbance, recognition will be given to the modified capability when setting or assigning a standard to (for) the site. The Standards are designed to establish the threshold for healthy rangelands. In some circumstances, an exception to the Standards or Guidelines may be necessary or unavoidable; however, **these instances should be under extreme conditions only,** and fully justified (documented) in order to be acceptable.

The **Guidelines** for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. The Guidelines were designed to provide direction, yet offer flexibility for implementation through activity plans and Terms and Conditions for grazing permits. The Bureau of Land Management (BLM) must operate within the constraints of other regulatory requirements that may affect how standards and guidelines are applied for livestock grazing, for example the Wild and Free Roaming Wild Horse and Burro Act (1971).

SUSANVILLE STANDARDS FOR RANGELAND HEALTH

STANDARD 1: UPLAND SOILS

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical and physical characteristics.

Meaning that:

Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate and landform; the soil is adequately protected against human caused wind or water erosion, and the soil fertility is maintained at/or improved to the appropriate level.

Criteria to Meet Standard:

* Evidence of wind and water erosion, such as rills and gullies, pedestaling, scour or sheet erosion, deposition of dunes is either absent or if present does not exceed what is natural for the site.

* Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site.

STANDARD 2: STREAMS

Stream channel form and function are characteristic for the soil type, climate and landform.

Meaning that:

Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity and sediment transport are able to function naturally and are characteristic of the soil type, climate and landform.

Criteria to Meet Standard:

* Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species.

* Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events.

* The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter.

* Portions of the primary floodplain are frequently flooded (inundated every 1-5 years).

STANDARD 3: WATER QUALITY

At a minimum, water quality is adequate for desired beneficial use of water resources on public lands.

Meaning that:

All waters are suitable for original use or desired beneficial use.

Criteria to Meet Standard:

* (Refer to riparian and wetland and stream criteria)

STANDARD 4: RIPARIAN and WETLAND SITES

Riparian and Wetland areas are in properly functioning condition.

Meaning that:

The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

Criteria to Meet Standard:

* Riparian vegetation is vigorous and mostly perennial, diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines.

* Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events.

* Negligible accelerated erosion as a result of human related activities is evident.

* Age class and structure of woody riparian and wetland vegetation are appropriate for the site.

Exceptions and Exemptions to Standard 4 (where Standard 4 is not applicable)

* Structural facilities constructed for livestock/wildlife water or other purposes are not natural wetland and/or riparian areas. Examples are: water troughs, stock ponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD 5: BIODIVERSITY

Healthy, productive and diverse populations of native plant and animal species, including special status species are maintained.

Meaning that:

Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Criteria to Meet Standard:

* A variety of age classes are present for most species.

* Vigor is adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur.

* Distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.

* Natural disturbances such as fire are evident, but not catastrophic.

* Non-native plant and animal species are present at acceptable levels.

* Habitat areas are sufficient to support viable populations and are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and maintain soil health.

SUSANVILLE RAC GUIDELINES FOR LIVESTOCK GRAZING

The following guidelines are meant to apply to one or more of the standards for rangeland health.

Guideline 1: A stubble height threshold will be present on all stream-side areas at the end of the growing season, or at the end of the grazing season if grazing occurs after fall dormancy. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirement of plant vigor maintenance, bank protection and sediment entrapment.

Utilization of stream-side herbaceous and woody plants should be limited to a specified amount of the current growth, and/or livestock should be removed to allow sufficient time for plant regrowth.

a. Late season use (summer or fall grazed pastures) requires more restrictive utilization based on site specific situations.

b. Special situations such as fragile fisheries habitats or easily eroded stream banks may require more restrictive utilization thresholds.

c. Hoof action impacts or chiseling on stream banks will not exceed specified thresholds so that stream bank stability is maintained or improved.

Guideline 2: Desired seral states will be determined through the Allotment Management Plan development process; generally the goal will be to achieve Potential Natural Communities in the riparian zone.

Guideline 3: Periods of rest from livestock grazing or other avoidable disturbances must be provided during/after periods of stress on the land (e.g: fire, flood, drought) and during critical times of plant growth.

Guideline 4: Plans for grazing on any allotment must consider other uses (recreation, archaeological sites, wildlife, horses and burros, mineral resource extraction, etc.) and be coordinated with the other users of public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 5: Intensity, frequency, season-of-use, and distribution of grazing shall provide for growth and reproduction of desired plant species, and the achievement of the potential natural vegetation or desired plant community.

Guideline 6: Grazing permits will include site-specific, measurable terms and conditions.

Guideline 7: Design and work towards implementation of a grazing management strategy for livestock for each grazing unit (pasture) within I (Improvement) and M (Maintenance) category allotments, to maintain or improve rangeland health. This may consist of, but not be limited to, season-of-use, rotation, or by setting utilization levels for desirable plants. Each management plan implemented will incorporate the factors necessary to maintain the health of desirable plants.

Guideline 8: Determination of grazing use by livestock must provide for the habitat requirements of fish and wildlife.

Guideline 9: Grazing management practices must sustain biological diversity across the landscape. A mosaic of seral stages, vegetation corridors, and minimal habitat fragmentation must be maintained.

Guideline 10: Aggressive action to reduce the invasion of undesirable exotic plant species into native plant communities will be taken. The spread of noxious weeds will be controlled through appropriate methods such as grazing management, fire management and other management practices.

Guideline 11: Prescribed fire and (natural) prescribed fire will be utilized to promote a mosaic of healthy plant communities, and vegetative diversity.

Guideline 12: Grazing and other management practices shall take advantage of transitional opportunities (e.g.: drought, flood, fire) to enhance or establish populations of desirable tree, shrub, herbaceous and grass species. Utilization levels will be established for desired seedlings, saplings, and/or mature plants to promote their presence in the plant community.

Guideline 13: Development of springs, seeps and other water related projects shall be designed to promote rangeland health. Wherever possible, water sources shall be available year long for use by wildlife.

Guideline 14: Transitional Guidelines

Due to the extended period of time that will likely be needed to initiate allotment specific analyses for terms and conditions on individual permits, the following guidelines will be applied immediately upon implementation of the Standards and Guidelines. The transitional guidelines represent the minimum necessary guidelines to prevent the most abusive grazing practices from occurring. Range site specific exemptions to the Standards and Guidelines would only be allowed in the most extreme situations (refer to Preamble, paragraph 3). Transitional Guidelines will be appended to the existing land use plans.

a. Each livestock grazing permit will be modified to include transitional terms and conditions setting maximum allowable use limits, unless objective, measurable utilization standards already are in effect. The following thresholds will be enforced:

   1. Riparian (permanently saturated areas or perennial streams)
      Threshold: Maximum 60% utilization of herbaceous vegetation to be measured by the Landscape Appearance Method.[1]
      Goal: Stability of the vegetative community.
      Indicator: No net loss of wetlands from livestock trampling.
   2. Uplands

[1] The Landscape Appearance Method is described in the Interagency Technical Reference for Utilization Studies and Residual Measurements, 1996.

Threshold: Maximum 50% utilization of perennial or native herbaceous and browse species to be measured by the Landscape Appearance Method.

3. Crucial (Essential) Deer Habitat
   Threshold: Maximum 20% utilization of annual growth on key browse species prior to October 1, in identified concentration areas. This will be measured by the Landscape Appearance Method.

b. Monitoring to determine compliance with utilization levels will be accomplished through a locally determined methodology as directed in the Rangeland Monitoring handbook, MS H-4400-1, California State Office, Octover 19, 1988; and will be in consultation with permittees and interested publics. Monitoring methods will be simple and easily accomplished. Permittees and others will be able to do the monitoring. BLM will be responsible for monitoring key areas.

   Data collection techniques will be agreed upon and cooperatively identified.

c. The transitional terms and conditions will remain in effect until a current, site-specific analysis is completed.

Guideline 15: Rangeland monitoring to determine utilization of forage resources and trend of rangeland health will be conducted in each allotment based on current accepted practices and techniques. Monitoring methodologies will be applicable to local conditions and developed in consultation with permittees and interested publics.

2.6 ALTERNATIVE 2: STATE-WIDE CONSISTENCY / CONSOLIDATED STANDARDS AND GUIDELINES

STATE-WIDE STANDARDS

STANDARD: SOILS

Soils exhibit characteristics of infiltration, fertility, permeability and other functional physical and biological characteristics that are appropriate to soil type, climate and landform.

Meaning That:

Precipitation is able to enter the soil surface and move through the soil profile at appropriate rates; the soil is adequately protected against accelerated wind or water erosion; the soil fertility is maintained at or moving toward appropriate levels; and the soil is capable of supporting the desired plant community.

As Indicated By:

* Ground cover (vegetation, litter and other types of ground cover such as rock fragments) is sufficient to protect sites from accelerated erosion.

* Evidence of wind or water erosion such as rills, gullies, pedestals and sheet or scour erosion or depositional evidence such as alluvial fans or dunes, does not exceed natural rates for the site.

* Vegetation is vigorous, diverse in species composition and age class, exhibits a variety of rooting depths, and reflects or is moving toward the desired plant community for the site.

* The physical condition of the soil such as the presence of surface crust, compacted soil layers, or condition of the soil structure is appropriate for the soil type.

* The occurrence and distribution of a biological crust (referred to as microphytic or cryptogamic) is appropriate for the soil type.

STANDARD: RIPARIAN and WETLAND AREAS:

Riparian[2] and wetland[3] areas will be in properly functioning condition and meeting management goals. Any riparian or wetland areas in functioning-at risk or nonfunctional condition must be in an upward trend.

Meaning That:

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[2] As measured at the river reach scale.

[3] Measured at the site scale.

The vegetation, soils, and stream channel morphology interact to maintain natural flow regime, capture and pass sediment, maintain the water table, sustain high water quality, maintain channel type characteristics and promote biodiversity.

Stock ponds, water troughs, and tailing ponds that have been constructed for purposes other than plant or wildlife habitat are not covered by this riparian wetland standard. However, these waters may be managed per objectives contained in land use plans. Since this standard is measured at the river reach scale, small water gaps in fences or otherwise restricted stream reaches need not meet this standard unless it is determined that problems at the water gap are affecting a large portion of the reach.

As Indicated By:

* Where appropriate, naturally occurring vegetation cover is at a high enough percentage to protect stream banks and dissipate energy during high flows.

* Age-class and structure of tree and or shrub riparian vegetation is diverse and appropriate for site. Recruitment of preferred species is adequate for sustaining the community.

* There is minimal cover of invader/shallow rooted species.

* Point bars are successfully colonized by riparian plant species.

* Where appropriate, stream channel has a high percentage of canopy cover: resulting in cooler water in summer, reduced icing in winter, and more food for aquatic species.

* Where appropriate, there is adequate woody debris.

* Where appropriate, habitat is sufficient to provide for plant and animal riparian dependent species. There is diversity of insects and amphibians.

STANDARD: SPECIES HABITAT

Habitats are maintained or enhanced to support healthy, productive and diverse populations of native plant and animal species in their appropriate habitats, including special status species.

Meaning That:

Native and other desirable plant and animal species are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

As Indicated By:

* A variety of age classes are present for most plant species.

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* Distribution of cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.

* Distribution and quality of habitats allow for reproduction and recovery of animal populations from localized catastrophic events.

* A diversity of plant species with various phenological stages and rooting depths are present on sites, as appropriate.

* Adequate organic matter (litter and standing plant material) is present for site protection and decomposition to replenish soil nutrients and support nutrient cycling.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and are not excessively fragmented.

* Noxious and invasive species are contained at acceptable levels,

* Populations of non-native plants and animals are at acceptable levels.

* Populations of special status species present and other managed species are healthy and in numbers that support long term viability.

* Habitats are sufficient to support viable populations of special status species present and are connected where possible across the landscape.

* Natural disturbances, such as fire, are evident but not catastrophic.

STANDARD: WATER QUALITY:

Water will have characteristics suitable for existing or potential beneficial uses.

Meaning That:

There are a number of existing laws, regulations, executive orders, policies, and agreements addressing the protection of water quality. This standard is consistent with all of these, specifically recognizing the authority of the states and Indian tribes in water quality issues within their administrative boundaries. Input by and coordination and consultation with the state water quality agency to define what constitutes compliance for water bodies within the area or activity under consideration is required. Input by and consideration with Indian tribes is required where tribal uses of the water could be effected by BLM management activities. A Management Agency Agreement (MAA) will be developed with the State of California which will make implementation of the above more effective and efficient.

As Indicated By:

* Achieving water quality monitoring goals identified in BLM's management plans developed in accordance with the 1993 MOU or subsequent agreements including the MAA. These goals may include numeric or narrative criteria for chemical, physical, or biological water quality constituents or physical and biological indicators.

STATE-WIDE GUIDELINES

The guidelines and preambles identified by each RAC for the RAC Standards and Guidelines Proposals (Alternative 1) will remain the same for this alternative except for the following additions and modifications:

Guideline 1: (For all RAC areas) Manage livestock grazing to protect identified sensitive cultural areas.

Guideline 2: The Residual Dry Matter (RDM) to remain after grazing on annual grasslands in both the Bakersfield and Ukiah RAC areas on rangelands with slopes less than 25% and in annual precipitation zones between 10 and 40 inches will be 400 pounds per acre.

TABLE C: Residual Dry Matter (RDM) Guidelines.
Definition is pounds/acre by slope and precipitation.

Precipitation	Slope 0-25%	Slope 26-45%	Slope 46% and Up
4" - 10"	200 lbs.	250 lbs.	350 lbs.
10" - 40"	400 lbs.	600 lbs.	800 lbs.
40" - 60"	750 lbs.	1,000 lbs.	1,250 lbs.
60+"	1,000 lbs.	1,500 lbs.	2,000 lbs.

2.6 ALTERNATIVE 3: NO ACTION (FALL-BACK STANDARDS AND GUIDELINES FROM THE REGULATIONS)

In accordance with the regulations published on February 22, 1995 in the Federal Register and identified in part 43 of the Code of Federal Regulations Subpart 4180, the following standards and guidelines will be in effect after February 12, 1997, until such time that State or regional standards and guidelines are developed and in effect.

There is not a "no action" alterative in the strictest interpretation, in that the regulations clearly direct there will be standards and guidelines developed or the fall-back standards and guidelines will be in effect. As there are no existing standards and guidelines for the BLM in California meeting all the fundamentals of rangeland health, the existing situation will change. This alterative will be considered as a no action alternative for analysis purposes, serving as a base for the analysis. The fall-back standards and guidelines were a decision product from the national "Rangeland Reform 94" rulemaking and environmental impact statement.

FALL-BACK STANDARDS

SOILS:

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

RIPARIAN / WETLAND:

Riparian-wetland areas are in properly functioning condition.

STREAM FUNCTION:

Stream channel morphology (including but not limited to gradient, width/depth ratio, channel roughness and sinuosity) and functions are appropriate for the climate and land form.

NATIVE SPECIES:

Healthy, productive and diverse populations of native species exist and are maintained.

FALL-BACK GUIDELINES

Guideline 1: Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture, and stabilize soils.

Guideline 2: Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils.

Guideline 3: Management practices maintain or promote sufficient residual vegetation to maintain, improve, or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability.

Guideline 4: Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform.

Guideline 5: Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.

Guideline 6: Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.

Guideline 7: Desired species are being allowed to complete seed dissemination in one out of every three years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow).

Guideline 8: Conservation of Federal threatened or endangered. Proposed, Category 1 and 2 candidate, and other special status species is promoted by restoration and maintenance of their habitats.

Guideline 9: Native species are emphasized in the support of ecological function.

Guideline 10: Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

Guideline 11: Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods shall be determined by the authorized officer).

Guideline 12: Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.

Guideline 13: Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.

Guideline 14: The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

Guideline 15: Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.

2.8 ALTERNATIVE 4: RAPID IMPROVEMENT / RAPID RECOVERY STANDARDS AND GUIDELINES

Summary

All alternatives analyzed in this EIS involve similar management actions. As required in the regulations, "appropriate action" would be taken "as soon as practicable but not later than the start of the next grazing season" after a problem is known.

Alternative 4, in contrast to the other alternatives, would ensure that any identified problems are corrected as fast as possible rather than taking a gradual, incremental, approach toward improved management. Alternative 4 is designed to promote sharp improvement in trend toward rangeland health within one to three years on favorable sites (e.g. riparian areas or wetlands). Appropriate action could include exclusion of livestock; changes in allowable forage utilization, the season of use, the timing or duration of that use; a combination of these or other actions; or any other management action that would accomplish the goal of properly functioning and healthy rangelands. Depending upon the site's potential, many sites may fully recover within this time period, others may require a longer time period.

As a first step under this alternative, an assessment of every allotment would be undertaken to determine where the standards are not being met. If current livestock grazing practices are resulting in rangeland and riparian areas not meeting one or more of the standards, BLM will adjust livestock grazing before the next grazing season. Monitoring of all allotments would be continued annually, and BLM would make continued adjustments annually if necessary to ensure that trends are sharply upward, and that management is resulting in the most rapid progress possible toward rangeland health.

Livestock grazing would be reestablished in any livestock exclusion areas only when rangeland health is achieved, and can be maintained on a long-term basis with continued livestock grazing. Range improvements such as fencing may be used to correct a small problem but major development projects (due to the logistics of project design, construction, cultural clearances, obtaining funding, etc.) would not be considered as immediate solutions in this alternative.

Some public comments suggested strict quantitative measures for reducing livestock grazing under alternative 4. We have not incorporated those quantitative measures because they would remove appropriate management flexibility of the authorized officer and in some cases would exceed BLM's legal authority.

Implementation of Alternative 4 would require substantial modifications of BLM's rangeland management and other program activities to accommodate an accelerated assessment and increased monitoring commitment and an accelerated schedule for achieving rangeland health. Due to the accelerated nature of the actions in this alternative, we would expect greater short term economic impacts to users than would occur under the other alternatives.

RAPID IMPROVEMENT STANDARDS

The standards for this alternative, except for the Water Quality Standard, are identical to the standards for Alternative 2, the State-wide Alternative. The standards for Soils, Riparian and

Wetland Areas, and Species Habitat are incorporated by reference, and the full text is not repeated here.

STANDARD: WATER QUALITY:

Surface and groundwater quality complies with California or Nevada, and other appropriate (e.g. Tribal) water quality standards.

Meaning That:

Each state designates beneficial uses for water supplies, and has a set of objectives, management practices and/or procedures to be followed to ensure that water quality is sufficient so that the water can be used for the designated purpose. BLM will work with the states to establish appropriate beneficial uses for public waters, and follow the state regulations to ensure that water quality on public lands meets the criteria for the designated beneficial uses of that water.

As Indicated By:

* Chemical constituents,water temperature, nutrient loads, fecal coliform, turbidity, and total dissolved oxygen levels are all within the appropriate range for the beneficial uses.

* Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae and plants) indicate that conditions are appropriate for the beneficial uses.

RAPID IMPROVEMENT GUIDELINES

The following guidelines contain all of the necessary tools and direction to ensure rapid improvement and recovery of rangelands in at-risk or non-functioning condition. Implementation will follow site-specific analysis and determination of the best method to correct the problem in the shortest length of time.

Guideline 1: If monitoring or verified observation indicates that one or more of the standards is not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then grazing management will be adjusted or changed before the following grazing season.

Adjustments shall be designed to show rapid, substantive and measurable progress towards desired ecological conditions. Adjustments shall include, but need not be limited to:

a. Reductions or changes in season of use in the affected area; or,
b. Reductions or changes in allowed utilization in the affected area; or,
c. Reductions or changes in stocking rate (up to and including total livestock exclusion); or
d. Changes to the grazing system; or
e. Changes to the class of livestock; or
f. Any combination of the above.

Changes may include any and all management practices that will accomplish the goals of meeting properly functioning and healthy rangelands, including practices recommended or suggested from new scientific studies that may be developed after these standards and guidelines are adopted. A couple of examples of management practices that may be used are locating salt blocks away from riparian areas, paving water gaps to alleviate or prevent erosion, or locating handling facilities away from riparian areas.

Guideline 2: If monitoring or verified observation indicates that one or more of the standards is not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then the following utilization limits recommended by Holechek (Holechek, et al, 1995, pg 195-198) for utilization of key herbaceous species will be applied.

Adjustments (more or less restrictive) to these limits may be made based upon monitoring, and the desired resource conditions. These desired resource conditions should be documented in an AMP or comparable plan. Downward adjustments to these limits may be made if monitoring indicates that significant progress is not being made toward meeting one or more of the standards.

Table D: UTILIZATION GUIDELINES

Community Type	Percent Use of Key Herbaceous Species*
Salt desert shrubland	25 - 35
Semi-desert grass and shrubland	30 - 40
Sagebrush grassland	30 - 40
California annual grassland	50 - 60
Coniferous forest	30 - 40
Mountain shrubland	30 - 40
Oak woodland	30 - 40
Pinyon-juniper woodland	30 - 40
Alpine tundra	20 - 30

* Ranges in good condition and/or grazed during the dormant season can withstand the higher utilization level. Those in poor condition or grazed during active growth should receive the lower utilization level.

Note: Percent utilization can be converted to approximate minimum allowed stubble heights or residual dry matter by using average values for height and dry weight of key species (see Kinney and Clary, 1991; or Clary and Webster, 1989, for example).

Guideline 3: When implementing guidelines 1 and 2, adequate amounts of vegetative ground cover, including standing plant material and litter, will be maintained or promoted to support infiltration, maintain soil moisture storage, and stabilize soils.
Residual Dry Matter (RDM) to remain on annual grasslands after grazing is shown on Table E.

TABLE E: Residual Dry Matter (RDM) Guidelines. Definition is pounds/acre by slope and precipitation.			
Precipitation	Slope 0-25%	Slope 26-45%	Slope 46% and Up
4" - 10"	200 lbs.	250 lbs.	350 lbs.
10" - 40"	400 lbs.	600 lbs.	800 lbs.
40" - 60"	750 lbs.	1,000 lbs.	1,250 lbs.
60+"	1,000 lbs.	1,500 lbs.	2,000 lbs.

Guideline 4: When implementing guidelines 1 and 2, subsurface soil conditions will be maintained or promoted that support permeability rates appropriate to climate or soils.

Guideline 5: When implementing guidelines 1 and 2, riparian / wetland functions including energy dissipation, sediment capture, groundwater recharge, and stream bank stability will be maintained, improved, and restored.

Guideline 6: A 4-6 inch minimum stubble height will remain at the end of the grazing season in most riparian areas. Minimum stubble heights greater than 6 inches will be set for critical fisheries, easily eroded streambanks, or unhealthy riparian areas (those not fully meeting standards, or those "functioning at risk").

Adjustments (more or less restrictive) to these limits may be made based upon monitoring, and the desired resource conditions. These desired resource conditions should be documented in an AMP or comparable plan. Increases to the minimum stubble height may be made if monitoring indicates that significant progress is not being made toward meeting one or more of the standards.

Guideline 7: When implementing guidelines 1, 2 and 6, stream channel morphology (e.g. gradient, width / depth ratio, channel roughness and sinuosity) and functions appropriate to the climate and landform will be maintained and promoted.

Guideline 8: When implementing guidelines 1 and 2, the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow will be maintained or promoted.

Guideline 9: When implementing guidelines 1 and 2, the opportunity for seedling establishment of appropriate plant species will be promoted when climatic conditions and space allow it. Additionally, opportunistic management will be employed. After exceptionally wet or dry years, or following fire, flood or other extraordinary events, livestock grazing may be reduced or eliminated in order to avoid interfering with recruitment of species which germinate or sprout in response to such events, or are unusually sensitive to damage from such events.

Guideline 10: When implementing guidelines 1 and 2, water quality will be maintained or enhanced to meet management objectives, such as meeting wildlife needs.

Guideline 11: When implementing guidelines 1 and 2, habitats will be maintained, enhanced or restored to meet the needs of, and promote the conservation of, Federal threatened or endangered, Proposed, Category 1 and 2 candidate, and other special status species.

Guideline 12: When implementing guidelines 1 and 2, the physical and biological conditions necessary to sustain native populations and communities of plants and animals will be maintained or promoted.

Guideline 13: Aggressive action will be taken to discourage the spread and infestation of weeds by livestock, such as the use of weed-free hay, livestock purging periods (Sheley 1995), and appropriate grazing management.

Guideline 14: When implementing guidelines 1 and 2, native species will be emphasized in the support of ecological function.

Guideline 15: When implementing guidelines 1 and 2, non-native species will be utilized only in those situations in which locally-collected native species are not available in sufficient quantities, or are incapable of maintaining or achieving properly functioning conditions and biological health.

2.9 ALTERNATIVE 5: PREFERRED ALTERNATIVE -- MODIFIED STANDARDS & GUIDELINES PROPOSED BY THE RESOURCE ADVISORY COUNCILS

This alterative includes three sets of proposed rangeland standards and guidelines, one for each of the RAC areas -- Bakersfield, Ukiah and Susanville. It is similar to Alternative 1, but has been modified by the RACs and BLM to reflect public comment and suggestions, BLM review and suggestion, and further RAC consideration following the draft EIS. Prior to the preamble for each set of standards and guidelines is a short listing of what changes have been made in Alternative 5 from Alternative 1.

2.91 BAKERSFIELD RAC RECOMMENDED STANDARDS AND GUIDELINES (Modified)

Changes

In the preamble the paragraph pertaining to DPCs being a measure of meeting the standards was removed. DPCs are management goals developed through land use plans, and should not be a measure of meeting the standards.

Within the Species standard, the word "viable" was added to the beginning of the standard for clarification.

Within the Species standard, the words "and desired" were added, based upon public comment.

Under the Species standard, the paragraph pertaining to DPCs in the Indicator section was deleted. It was felt that DPCs are a management goal developed through the land use plan, and should not be a measure of meeting the standards.

Within the Riparian standard, the phrase "or are making significant progress toward" was deleted. The regulations state that standards must be met, or significant progress must be made toward meeting the standards. A standard must be a set goal, and it is inappropriate within a standard to use that phrasing.

Within the Riparian standard, the phrase "achieving an advanced ecological status" was deleted and replaced with "meeting regional and local management objectives." This was done because there are times that an advanced ecological status may not be the goal.

Within the Riparian standard, under physical indicators, the reference to Rosgen's classification system was deleted. The intent is to use that system initially, but to be able to use any new system that is developed if it is appropriate, without having to modify the standard.

The Water Quality standard was amended slightly to conform with the suggestions of the State Water Resources Control Board.

Original Guideline 5 was moved to be guideline 3. Guideline 3 became 4, and 4 became 5.

Guideline 5 was amended by adding a paragraph to explain how utilization levels will be implemented. This is from a suggestion by Holechek, modified by BLM, and discussed at the workshop with the RAC representatives.

A new Guideline 9 was added to discuss utilization of browse species in deer concentration areas. This was a suggestion from the public, and taken from a guideline originally developed by the Susanville RAC.

Guideline 12 (was 11) was amended like #5, by adding a paragraph to explain how utilization levels will be implemented.

Table A was amended to include references to Coniferous Forest and Mountain Shrubland, Alpine Tundra and Salt Desert Shrubland.

Guideline 17 (was 16) for water quality, was amended by the addition of two statements suggested by the State Water Resources Control Board.

Guideline 18 was added to discuss coordination with other uses. This was a suggestion from the public, and is identical to a guideline developed by the Ukiah RAC.

Standards and Guidelines for Rangeland Health in The Bakersfield District

Preamble

The standards for rangeland health and guidelines for livestock management on Bureau of Land Management lands are written to accomplish the four fundamentals of rangeland health, insofar as the standards are affected by livestock grazing practices. Those fundamentals are:

A. Watersheds are properly functioning;
B. Ecological processes are in order;
C. Water Quality complies with State standards; and,
D. Habitats of protected species are in order.

A "standard" serves as the criterion to determine if management actions are resulting in the maintenance or attainment of healthy rangelands per the four fundamentals of rangeland health. Standards are expressions of physical and biological conditions or degree of function required for healthy, sustainable rangelands. "Guidelines" serve as the vehicle to implement management actions related to livestock grazing to accomplish rangeland health standards. Guidelines will indicate the types of grazing methods and practices determined to be appropriate to ensure that standards can be met. The public should be an active participant in the application of these standards and guidelines.

Standards and guidelines will apply to all BLM lands within the geographic area for which they are written. Using the complete set of standards and guidelines, the local BLM range managers, in consultation with grazing permittees and other interested parties, will determine "terms and conditions" for each grazing allotment. These terms and conditions are the specific grazing practices that are appropriate for that allotment.

BLM lands vary so greatly in topography, climate, soils, water availability, size and distribution of parcels, and other factors, that local managers must have the flexibility needed to determine which grazing practices will work best in each area, and to change those practices when necessary to achieve the desired rangeland conditions.

The scientific evidence and collective knowledge of the public and rangeland managers show a wide variety of grazing effects on plants, animals and watersheds. As a result, the application of these standards and guidelines will emphasize using the best available information for a site-specific situation, and the results of historical grazing patterns should be given significant weight in any decisions about grazing practices to be followed on BLM allotments. Where historical grazing use has been compatible with meeting the standards for soils, species, riparian areas or water quality, no permanent changes should be mandated in the existing grazing patterns without substantial scientific evidence that changing the existing grazing pattern will improve the ability to achieve the standards.

For any standard, guideline, term, or condition to work, it must be capable of being achieved, based on sound science or good common sense, and be measurable, understandable, and economically feasible. There is no use in setting standards that can not be met.

Successful application of these standards and guidelines will depend on BLM's capability to monitor rangeland conditions and implement management practices. Each Bureau office should develop a monitoring and implementation plan that sets priorities based on resource conditions, trends, and resource values.

BAKERSFIELD STANDARDS FOR RANGELAND HEALTH

STANDARD: SOILS

Soils exhibit functional biological and physical characteristics that are appropriate to soil type, climate, and land form.

Meaning That:

Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.

As Indicated By:

* Ground cover (vegetation and other types of ground cover such as rock) is sufficient to protect sites from accelerated erosion.

* Litter/residual dry matter is evident, in sufficient amounts to protect the soil surface.

* A diversity of plant species, with a variety of root depths, is present and plants are vigorous during the growing season.

* There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface

* Biological (microphytic or cryptogamic) soil crusts are in place where appropriate.

STANDARD: SPECIES

Viable, healthy, productive, and diverse populations of native and desired species, including special status species (Federal T&E, Federal proposed, Federal candidates, BLM sensitive, or Calif. State T&E) are maintained or enhanced where appropriate.

Meaning That:

Native and other desirable plant and animals are diverse, vigorous, able to reproduce and support the hydrologic cycle, nutrient cycles, and energy flows over space and time.

As Indicated By:

* Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.

* A variety of age classes are present for most perennial plant species.

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* The spatial distribution and cover of plant species and their habitats allows for reproduction and recovery from localized catastrophic events.

* A diversity of plant species with various phenological stages and rooting depths are present on sites where appropriate.

* Appropriate natural disturbances are evident.

* Levels of non-native plants and animals are at acceptable levels.

* Special status species present are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented.

* Noxious and invasive species are contained at acceptable levels.

STANDARD: RIPARIAN

Riparian/wetland vegetation, structure and diversity, and stream channels and floodplains are functioning properly, and meeting regional and local management objectives.

Meaning That:

The vegetation and soils interact to capture and pass sediment, sustain infiltration, maintain the water table, stabilize the channel, sustain high water quality, and promote biodiversity appropriate to soils, climate, and landform.

As Indicated By:

Vegetation Attributes:

* Vegetation cover is greater than 80% or the percentage that will protect banks and dissipate energy during high flows.

* Age-class and structure of woody/riparian vegetation are diverse and appropriate for the site.

* Where appropriate, shading is sufficient to provide adequate thermal regulation for fish and other riparian dependent species.

* Where appropriate, there is adequate woody debris.

* A diversity of plant species with various phenological stages and rooting depths is present. Root masses are sufficient to stabilize stream banks and shorelines.

* Plant species present indicate that soil moisture characteristics are being maintained.

* There is minimal cover of invader/shallow-rooted species.

* Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

* Point bars are vegetated.

Physical Indicators:

* Streambank stability, pool frequency, substrate sediments, stream width, and bank angles are appropriate for the stream type.

STANDARD: WATER QUALITY

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards.

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened (and livestock grazing activities are a contributing factor), and restore them where they are currently degraded (and livestock grazing activities are a contributing factor). This objective is of even higher priority in the following situations:

(a) where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;

(b) where aquatic habitat is present or has been present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and,

(c) in designated water resource sensitive areas such as riparian and wetland areas.

Meaning That:

BLM will, pursuant to the Clean Water Act:

Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers;

Protect the integrity of these waters where it is currently threatened;

Insofar as is feasible, restore the integrity of these waters where it is currently impaired;

Not contribute to pollution and immediately remedy any pollution resulting from its actions that violates applicable California (including the requirements identified in Regional Basin Plans), or Tribal water quality standards or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in California, or US EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act).

Be consistent with the non-degradation policies identified in the Regional Basin Plans in California.
Work with the State (including the Regional Water Quality Control Boards) and USEPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for 303(d)-listed water bodies, and implement the applicable requirements to

ensure that water quality on public lands meets the criteria for the designated beneficial uses of the water.

Reasonably implement Best Management Practices (BMPs) approved by the SWRCB to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs.

As Indicated By:

* The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.

* Achievement of the standards for riparian, wetlands, and water bodies.

* Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses.

* Acceptable results from implementation and effectiveness monitoring or changes in management to address deficiencies identified by such monitoring.

Exceptions:

Impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting State drinking water standards per SWRCB Resolution No. 88-63.

BAKERSFIELD RAC GUIDELINES FOR GRAZING MANAGEMENT:

Guideline 1: Livestock grazing operations will be conducted so that progress is made toward maintaining or promoting adequate amounts of vegetative ground cover, including standing plant material and litter to support infiltration, permeability, and maintain soil moisture storage and soil stability appropriate for the ecological sites within the management units. The ground cover should maintain soil organisms, plants, and animals to support the hydrologic and nutrient cycles, and energy flow.

Guideline 2: Implement grazing systems that regulate the timing and intensity of grazing. Continuous season-long grazing use is allowed if it has been demonstrated that it can be consistent with achieving a healthy, properly functioning ecosystem. Grazing systems should specify season of use based on plant phenology and geohydrologic processes where appropriate. On annual rangelands, mulch management should be used to define target forage use levels that will ensure that sufficient amounts of residual dry matter (RDM) or standing plant material will be maintained throughout the grazing season. Mulch levels for annual grasses should meet the requirements of Table A, whenever feasible. Mulch levels will include a "buffer" to account for RDM loss from other natural processes (decomposition, animal use, etc.). Exceptions may be approved during the green season when substantial

regrowth is expected or if lower RDM levels are required to meet particular rangeland health objectives, such as reducing competition for a desired species.

Guideline 3: On Annual Range, readiness will be determined by: 1) Minimum RDM levels at the time of turnout prior to green season growth are exceeded by 200 pounds per acre; or 2) Minimum RDM levels and at least 2 inches of new growth are present in the growing season.

Guideline 4: Where appropriate, use grazing systems that maintain the presence and distribution of microsites for seed germination.

Guideline 5: Perennial plant utilization should be limited to appropriate levels of the current year's growth as indicated in Table A, unless it has been proven that this level of use is incompatible with the continued existence of the plant.

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture) are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds of Table A for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 6: Implement grazing systems that permit existing native species to complete entire life cycles and sustain the spatial distribution of microsites necessary for seed germination at intervals sufficient to maintain the viability of the species.

Guideline 7: Use grazing systems that are compatible with the persistence of desired species. Grazing use should provide appropriate levels of plant matter that will promote the existence of desirable plants and animals.

Guideline 8: Native species are recommended for all revegetation and enhancement projects unless they are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

Guideline 9: Within identified deer concentration areas there will be no more than 20 percent utilization of annual growth on key browse species prior to October 1.

Guideline 10: Periods of rest from livestock grazing or other avoidable disturbances should be provided during/after episodic events (e.g., flood, fire, drought) and during critical times of plant growth needed to achieve proper functioning conditions, recovery of vegetation, or desired plant community.

Guideline 11: Grazing management practices will allow for the reproduction of species that will maintain riparian-wetland functions, including energy dissipation, sediment capture, groundwater recharge, streambank stability, the hydrologic cycle, nutrient cycle, and energy flow.

Guideline 12: Grazing practice should maintain a minimum herbage stubble height on all stream-side, riparian and wetland areas at the end of the growing season. There should be sufficient residual stubble or regrowth at the end of the growing season to meet the requirements of plant vigor maintenance, bank protection, and sediment entrapment (Table A).

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year.

The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds of Table A for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first

grazing year following this approval. In addition to implementing management changes that are

Table A: Forage Utilization and Mulch Management Requirements				
Precipitation	Plant Community	Slope, Elevation	Minimum Residual Dry Matter* (lbs/ac)	Maximum Utilization of Key Perennials, #, ##
4-10 Inches	California annual grassland	<25% 25-45% >45%	200 250 350	25-40%
10-40 Inches	California annual grassland, Oak woodlands	<25% 25-45% >45% <15%, 1000-2500' >15%, >2500'	400 600 800 700-900** 1000-1200**	30-45%
8-30 Inches	Sagebrush grassland, semi-desert grass and shrubland, Pinyon-juniper woodland, Cool season pasture	NA	NA	30-40%
	Coniferous forest, mountain shrubland	NA	NA	30-40%
	Alpine tundra	NA	NA	20-30%
	Salt Desert Shrubland	NA	NA	25-35%
4-40 Inches	Riparian areas, wetlands	NA	4-6 inch stubble height #	35-45% herbs, 10-20% shrubs, 0-20% trees

* Minimum to be present at fall green/winter green-up.

** Higher minimum is for sites that are: in unsatisfactory condition, grazed during active growth, not rested, or on steeper slopes.

Stubble height and percent utilization levels are initial values that should be adjusted to consider timing of grazing use and plant phenology, resource conditions and a site's resiliency at the allotment, pasture or site-specific location. Perennial plant utilization levels and stubble heights are based on a literature review by Holechek (1991) and Willoughby (see the Annotated Bibliography on Utilization).

On sites in unsatisfactory condition and/or trend, perennial plant utilization should be no more than 15-25% current annual growth where less than one period of rest is provided per growing season of use.

expected to bring stubble heights within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the

management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 13: Water sources, wetlands and riparian areas may be fenced to reduce impacts from livestock.

Guideline 14: The development of water sources will maintain ecologic and hydrologic function and processes.

Guideline 15: Locate salt blocks and other supplemental feed well away from riparian/wetland areas.

Guideline 16: Locate new livestock handling and/or management facilities outside of riparian/wetland areas. For existing livestock handling facilities inside riparian areas, ensure that facilities do not prevent attainment of standards. Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of standards.

Guideline 17: Implement grazing systems that will promote compliance with the Water Quality Standards.

a. Apply the management practices recognized and approved by the State of California as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

b. In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

Guideline 18: The plan for grazing on any allotment must consider other uses (recreation, wildlife, mineral resource development, etc.) and be coordinated with other users of the public lands so that overall use does not detract from the goal of achieving rangeland health.

2.92 UKIAH RAC RECOMMENDED STANDARDS AND GUIDELINES (Modified)

Changes

In the preamble the paragraph pertaining to DPCs being a measure of meeting the standards was removed. DPCs are management goals developed through land use plans, and should not be a measure of meeting the standards.

Within the Species standard, the word "viable" was added to the beginning of the standard for clarification.

Within the Species standard, the words "and desired" were added, based upon public comment.

Under the Species standard, the paragraph pertaining to DPCs in the Indicator section was deleted. It was felt that DPCs are a management goal developed through the land use plan, and should not be a measure of meeting the standards.

Within the Riparian standard, the phrase "or are making significant progress toward" was deleted. The regulations state that standards must be met, or significant progress must be made toward meeting the standards. A standard must be a set goal, and it is inappropriate within a standard to use that phrasing.

Within the Riparian standard, the phrase "achieving late seral stages" was deleted and replaced with "meeting regional and local management objectives." This was done because there are times that an advanced ecological status or late seral stage may not be the goal.

The Water Quality standard was amended to conform with the suggestions of the State Water Resources Control Board. The exceptions as written were a violation of law; and new wording was provided for the Meaning section, Indicators section, and Exceptions.

Guideline 2 was amended by adding statements on stubble height, utilization of trees and shrubs, and how the utilization will be implemented. This was suggested by Holechek and other members of the public, modified by BLM, and discussed at the workshop with the RAC representatives.

Guideline 7 was moved to number 3; and numbers 3-6 all moved down one number.

Guideline 24 was added to discuss utilization of perennial grasslands, based upon information from Holechek, modified by BLM, and discussed at the workshop with the RAC representatives.

Guideline 25 was added to discuss utilization of browse species. This was a suggestion from the public, and taken from a guideline originally developed by the Susanville RAC.

Guidelines 26 and 27 were added at the suggestion of the State Water Resources Control Board to help with water quality.

Standards and Guidelines for Rangeland Health in The Ukiah District

Preamble

The standards for rangeland health and guidelines for livestock grazing on BLM administered lands are written to accomplish the four fundamentals of rangeland health, insofar as they are affected by livestock grazing practices. These fundamentals are:

A. Watersheds are properly functioning;
B. Ecological processes are in order;
C. Water quality complies with state standards; and,
D. Habitats of protected species are in order.

Additionally, the standards and guidelines must be consistent with those of adopted regional conservation strategies which affect the Northwestern California public lands under the purview of the Ukiah Resource Advisory Council. The Northwest Forest Plan (NFP; USDI and USDA 1994) encompasses the entire range of the northern spotted owl and provides a set of land allocations and standards and guidelines for management activities. It contains both terrestrial and aquatic conservation strategies. Range management standards and guidelines are directed toward attainment of aquatic conservation strategy objectives through management of riparian reserves. The Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH; USDI and USDA 1995) extends riparian standards and guidelines as in the NFP to all anadromous watersheds beyond the range of the northern spotted owl.

The RAC and BLM staff reviewed these standards and guidelines during development of the Standards for Rangeland Health and Guidelines for Livestock Grazing to ensure that the Aquatic Conservation Strategy objectives of the NFP and Riparian Management Objectives of PACFISH were consistent, and that the standards and guidelines were consistent with the BLM's Redding and Arcata Resource Management Plans.

A "standard" serves as the criterion to determine if management actions are resulting in the maintenance or attainment of healthy rangelands per the four fundamentals of rangeland health. Standards are expressions of physical and biological conditions or degree of function required for healthy sustainable rangelands. Guidelines serve as the vehicle to implement management actions related to livestock grazing to accomplish the rangeland health standards. Guidelines will indicate the types of grazing methods and practices determined to be appropriate to ensure that the standards can be met.

Standards and guidelines will apply to all BLM lands within the geographic area for which they are written. Using the standards and guidelines, the local BLM managers, in consultation with grazing permittees and other interested parties, will determine terms and conditions for each grazing allotment. These terms and conditions are the specific grazing practices that are appropriate for that allotment.

BLM lands vary so greatly in topography, climate, soils, water availability, size and distribution of parcels, and other factors that the local managers must have the flexibility needed to determine which grazing practices will work best in each area, and to change those practices when necessary to achieve the desired rangeland conditions.

Where historical grazing has been compatible with meeting the standards for soils, species, riparian areas or water quality, no permanent changes should be mandated in the existing grazing patterns without substantial scientific evidence that changing the grazing pattern will improve the ability to achieve the standards.

For any standard, guideline, term, or condition to work, it must be capable of being achieved, based on sound science or good common sense, and be measurable, understandable, and economically feasible. There is no use in setting standards that cannot be met.

UKIAH STANDARDS FOR HEALTHY RANGELANDS

STANDARD: SOILS

Soils exhibit characteristics of infiltration, fertility, permeability rates, and other functional biological and physical characteristics that are appropriate to soil type, climate, desired plant community, and land form.

Meaning That:

Precipitation is able to enter the soil surface at appropriate rates; the soil is adequately protected against accelerated erosion; and the soil fertility is maintained at appropriate levels.

As Indicated By:

* Ground cover (vegetation and other types of ground cover such as rock) sufficient to protect sites from accelerated erosion.

* Litter/residual dry matter evident, accumulating in place, and showing negligible movement by water.

* A diversity of plant species, including native plants, with a variety of root depths, is present and plants are vigorous during the growing season (Rangeland Health, National Research Council, 1994, page 130, table 4-8).

* There is minimal evidence of accelerated erosion in the form of rills, gullies, pedestaling of plants or rocks, flow patterns, physical soil crusts/surface sealing, or compaction layers below the soil surface.

* Biological (microphytic or cryptogamic) soil crusts, if present, are intact.

STANDARD: SPECIES

Viable, healthy, productive, and diverse populations of native and desired plant and animal species, particularly special status species, are maintained and/or being restored.

Meaning That:

As Stated.

As Indicated By:

* Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.

* A variety of age classes is present for desired plant species (Rangeland Health, National Research Council 1994, page 130 table 4-8).

* Plant vigor is adequate to maintain desirable plants and ensure reproduction and recruitment of plants when favorable climatic events occur.

* The spatial distribution of plant and animal species and their habitats allows for reproduction and recovery from localized catastrophic events.

* A diversity of plant species with various developmental stages and rooting depths is present to extend the photosynthetic period and increase energy capture.

* There is evidence of beneficial natural disturbances.

* Non-native, noxious, and invasive species are at acceptable levels.

* Special status species and other local species of concern are healthy and in numbers that appear to ensure stable to increasing populations; habitat areas are large enough to support viable populations or are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and support nutrient cycling.

* Where appropriate, biological soil crusts (also called microphytic or cryptogamic soil crusts) are present and not excessively fragmented.

STANDARD: RIPARIAN

Riparian/wetland vegetation, structure and diversity, and stream channels and floodplains are functioning properly, and meeting regional and local management objectives.

Meaning That:

The vegetation and soils interact to capture and pass sediment, sustain infiltration, maintain the water table, stabilize the channel, sustain high water quality, and promote biodiversity appropriate to soils, climate, and landform.

As Indicated By:

* Naturally occurring vegetation cover will protect banks and dissipate energy during high flows.
* Age-class and structure of woody/riparian vegetation are diverse and appropriate for the site. Recruitment of preferred species is adequate for sustaining the community.

* Where appropriate, habitat is sufficient to provide for plant and animal riparian-dependent species. There is diversity and abundance of insects and amphibians.

* Where appropriate, there is adequate woody debris.

* A diversity of plant species with various developmental stages and rooting depths is present (Rangeland Health, National Research Council 1994, page 112, and table 4-8 on page 130). Root masses are sufficient to stabilize stream banks and shorelines.

* Plant species present indicate that soil moisture characteristics are being maintained.

* Shallow-rooted, invader plant species are not displacing native species.

* Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition (Rangeland Health, National Research Council 1994, page 130, table 4-8).

* Point bars are becoming vegetated over time.

* There is adequate stream bank stability, morphology, pool frequency, stream width depth ratio, and minimal substrate sediments and bare ground.

Exceptions and exemptions from the riparian standard, where the standard may not be applicable:

Structural facilities constructed for livestock/wildlife water or other purposes which are not natural wetland and/or riparian areas will be excepted. Examples are: water troughs, stockponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD: WATER QUALITY

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards.

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened (and livestock grazing activities are a contributing factor) and restore them where they are currently degraded (and livestock grazing activities are a contributing factor). This objective is of even higher priority in the following situations:

(a) where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act;
(b) where aquatic habitat is present or has been present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and,

(c) in designated water resource sensitive areas such as riparian and wetland areas.

Meaning That:

BLM will, pursuant to the Clean Water Act:

Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers;

Protect the integrity of these waters where it is currently threatened;

Insofar as is feasible, restore the integrity of these waters where it is currently impaired;

Not contribute to pollution and immediately remedy any pollution resulting from its actions that violates applicable California water quality standards (including the requirements identified in Regional Basin Plans), or Tribal water quality standards, or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in California, or US EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act).

Be consistent with the non-degradation policies identified in the Regional Basin Plans in California.

Work with the State (including the Regional Water Quality Control Boards) and USEPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for 303(d)-listed water bodies, and implement the applicable requirements to ensure that water quality on public lands meets the criteria for the designated beneficial uses of the water.

Reasonably implement Best Management Practices (BMPs) approved by the SWRCB to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs.

As Indicated By:

* The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.

* Achievement of the standards for riparian, wetlands, and water bodies.

* Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae and plants) indicate support for beneficial uses.
* Acceptable results from implementation and effectiveness monitoring or changes in management to address deficiencies identified by such monitoring.

Exceptions:

Impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting drinking water requirements per SWRCB Resolution No. 88-63.

UKIAH GUIDELINES FOR LIVESTOCK MANAGEMENT

RIPARIAN HABITATS

Guideline 1: Management for riparian-dependent special status species, where they occur, is primary.

Guideline 2: Season of use should be short term and allow for plant regrowth and reproduction. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirements of plant vigor maintenance, plant and wildlife habitat, stream shading, bank protection and sediment entrapment. Specific grazing dates will be set in lease terms and conditions.

A 4-6 inch minimum stubble height will remain at the end of the growing season in most riparian areas.

There should be no more than 20% utilization on key riparian tree and shrub species in those areas where the presence of woody riparian species is necessary to meet standards.

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year.

The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring stubble heights within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further

management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 3: Degraded riparian areas may require complete rest or other change in management practices to initiate the recovery process.

Guideline 4: Locate salt blocks and supplemental feed well away from riparian zones.

Guideline 5: Locate all livestock handling and management facilities outside of riparian areas.

Guideline 6: Limit livestock trailing and watering to those areas and times that will not retard or prevent attainment of standards. Avoid trailing in vernal pools and wetlands whenever possible.

Guideline 7: Make temporary changes to livestock grazing management practices, including increases or decreases in stocking rates and seasons of use, in response to important episodic events (drought, flood, fire, good germination, etc.).

Guideline 8: Limit or exclude livestock grazing in identified culturally sensitive areas where grazing is detrimental to such sites.

Guideline 9: BLM will work with livestock grazing lessees to utilize prescribed fire, fencing, rest-rotation, holistic resource management, integrated pest management, and other innovative management practices where appropriate to protect riparian health.

Guideline 10: Native species are recommended for all revegetation and enhancement projects unless they are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions or biological health.

GUIDELINES FOR ANNUAL UPLANDS

TABLE B: Residual Dry Matter (RDM) Guidelines.
Definition is pounds/acre by slope and precipitation.

Precipitation	Slope 0-25%	Slope 26-45%	Slope 46% and Up
10" - 40"	400 lbs.	600 lbs.	800 lbs.
40" - 60"	750 lbs.	1,000 lbs.	1,250 lbs.
60+"	1,000 lbs.	1,500 lbs.	2,000 lbs.

Annual Upland Rangelands

Guideline 11: Grazing will be managed to achieve the RDM levels of Table B. If necessary to meet desired plant community (DPC) objectives, or if there is a probability to promote or enhance native perennial plant communities (including special status plants) to check degradation, then adjust grazing management practices, such as: season of use, RDM, stocking level, distribution, pasture rotation, or other range management practices.

Guideline 12: Continuous season-long grazing is allowed if it has been demonstrated that it can be consistent with achieving a healthy, properly functioning ecosystem.

Guideline 13: Alter livestock grazing or initiate erosion control practices in areas where soil is compacted or prone to accelerated erosion.

Guideline 14: BLM will work with livestock grazing lessees to utilize prescribed fire, fencing, rest-rotation, holistic resource management, integrated pest management, and other innovative management practices where appropriate.

Guideline 15: Make temporary changes to livestock grazing management practices, including increases or decreases in stocking rates and seasons of use in response to important episodic events (drought, flood, fire, good germination, etc.).

Guideline 16: Limit or exclude livestock grazing in identified culturally sensitive areas where grazing is detrimental to such sites.

Guideline 17: Degraded areas may require complete rest or other change in management practices to initiate the recovery process.

Guideline 18: The plan for grazing an any allotment must consider other uses (recreation, wildlife, mineral resource development, etc.) and be coordinated with other users of the public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 19: Encourage grazing management practices that sustain biological diversity across the landscape by providing a mosaic of seral stages and vegetation corridors, and minimizing habitat fragmentation.

Guideline 20: Implement aggressive action to reduce the invasion of exotic plant species into native plant communities. Control the spread of noxious weeds through various methods such as grazing management, fire management, and other vegetative management practices.

Guideline 21: Utilize prescribed fire and natural prescribed fire to promote a broad vegetative diversity of healthy plant communities, while creating a mosaic network of interconnected vegetative resources.

Guideline 22: Native species are recommended for all revegetation and enhancement projects unless they are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions of biological health.

Perennial Rangeland Guidelines

Guideline 23: No authorized livestock grazing in new allotments which are native perennial grasslands until guidelines specific to these perennial species are developed and adopted.

Guideline 24: In existing allotments with perennial grass components, if monitoring or documented observation indicates that one of more of the standards is not being met, and if significant progress is not being made toward meeting all of those standards that are not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then the following utilization levels will be applied. These utilization levels will be applied unless and until site-specific utilization levels are developed for specific allotments and documented in allotment management plans, other management plans, and/or in terms and conditions of grazing permits/leases. Site-specific utilization levels may be more restrictive than the guidelines presented below, consistent with achieving the desired resource conditions (as prescribed in land use plans and activity plans) and progress toward meeting these.

UTILIZATION GUIDELINES (adapted from Holechek 1988 and Holechek et al. 1995)	
Community Type	Percent of Use of Key Herbaceous Species
Salt desert shrubland	25-35
Semi-desert grass and shrubland	30-40
Sagebrush grassland	30-40
Perennial grass communities within the California annual grassland vegetation type	30-40
Coniferous forest	30-40
Mountain shrubland	30-40
Oak woodland	30-40
Pinyon-juniper woodland	30-40
Alpine tundra	20-30

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture) are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to

remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds in the above table for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

General Guidelines

Guideline 25: There will be no more than 20 percent utilization of annual growth on key browse species prior to October 1 within identified deer concentration areas.

Guideline 26: Apply the management practices recognized and approved by the State of California as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

Guideline 27: In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

2.93 SUSANVILLE RAC RECOMMENDED STANDARDS AND GUIDELINES (Modified)

Changes

Under the Soils standard, the Criteria section was amended by adding a statement about ground cover similar to that in the Ukiah standard. This was done because ground cover is an important element in maintaining healthy soils, and the analysis showed that it had originally been overlooked in this standard.

The Water Quality standard was completely rewritten to comply with law and the BLM regulations. The text was kept short at the RAC's request, with the full intent stated in Appendix 15 of the Final EIS. This appendix contains wording provided by the State Water Resources Control Board.

The Riparian and Wetland standard was amended by adding the phrase "and meeting regional and local management objectives. This was agreed to by the RAC representatives to make it consistent with the Bakersfield and Ukiah riparian standards.

Within the Biodiversity standard, the word "viable" was added to the beginning of the standard for clarification.

Under the Biodiversity standard, a statement dealing with habitat structure was added to the beginning of the Criteria section. This statement was included in both the Bakersfield and Ukiah species standards, and it was suggested that it be included in this standard for consistency, and to clarify the intent.

Guidelines 14 and 15 were suggested by the State Water Resources Control Board, which were added to the guidelines within all three RAC areas.

Guideline 16, addressing utilization levels, was added to the Susanville RAC area guidelines to replace Guideline 14, the Transitional Guideline, which was deleted from Alternative 5. There were a variety of reasons, which are addressed in several places in Chapter 5 and the Annotated Bibliography of the Final EIS. In summary, the discussion of utilization levels generated by the draft EIS resulted in BLM doing an intensive literature review of the best science (requested by both pro-grazing and anti-grazing groups). The inescapable conclusion was that the utilization levels in Guideline 14 were totally inadequate to correct grazing problems where they were occurring, and could, in many cases lead to degradation in areas that are currently meeting rangeland health standards. The RAC did not all concur with this guideline.

Guideline 17 (was 15) was amended to clarify the technical source, and the intent that it be easily accomplished.

Susanville Resource Advisory Council

Preamble

Healthy rangelands contribute to the social and economic well being of rural communities in Northeastern California and Northwestern Nevada, and they provide, over the long term, the most reliable harvest of rangeland resources. The objective of rangeland resource planning is to integrate BLM resources with other resources to achieve the mandate of multiple-use and sustained yield management of renewable resources in an environmentally sound and cost-effective manner.

The **Standards** of rangeland health are expressions of physical and biological condition or degree of function required for healthy, sustainable rangelands. The Standards are applied on a landscape scale. Some standards may not apply to all acres. For example, a mosaic of vegetation types and age classes may produce the diversity associated with healthy rangelands; however, some individual vegetation communities within the mosaic may lack diversity.

The Standards always relate to the capability or potential of a specific site. The land will not be expected to produce vegetation or support habitats not attainable due to climate, soils, or other limiting attributes. In instances where site capability or potential has changed due to human-caused or natural disturbance, recognition will be given to the modified capability when setting or assigning a standard to (for) the site. The Standards are designed to establish the threshold for healthy rangelands. In some circumstances, an exception to the Standards or Guidelines may be necessary or unavoidable; however, **these instances should be under extreme conditions only,** and fully justified (documented) in order to be acceptable.

The **Guidelines** for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting the standard. The Guidelines were designed to provide direction, yet offer flexibility for implementation through activity plans and terms and conditions for grazing permits. The Bureau of Land Management (BLM) must operate within the constraints of other regulatory requirements that may affect how standards and guidelines are applied for livestock grazing, for example the Wild Free-Roaming Horse and Burro Act (1971).

SUSANVILLE STANDARDS FOR RANGELAND HEALTH

STANDARD 1: UPLAND SOILS

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical and physical characteristics.

Meaning that:

Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human-caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Criteria to Meet Standard:

* Ground cover (vegetation, litter, and other types of ground cover such as rock fragments) is sufficient to protect sites from accelerated erosion.

* Evidence of wind and water erosion, such as rills and gullies, pedestaling, scour or sheet erosion, and deposition of dunes is either absent or, if present, does not exceed what is natural for the site.

* Vegetation is vigorous, diverse in species composition and age class, and reflects the potential natural vegetation or desired plant community for the site.

STANDARD 2: STREAMS

Stream channel form and function are characteristic for the soil type, climate, and landform.

Meaning that:

Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Criteria to Meet Standard:

* Gravel bars and other coarse textured stream deposits are successfully colonized and stabilized by woody riparian species.

* Stream bank vegetation is vigorous and diverse, mostly perennial, and holds and protects banks during high stream flow events.

* The stream water surface has a high degree of shading, resulting in cooler water in summer and reduced icing in winter.

* Portions of the primary floodplain are frequently flooded (inundated every 1-5 years).

STANDARD 3: WATER QUALITY

Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the State standards within the respective boundaries of the States of California and Nevada.

Exceptions:

Within California, impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting drinking water standards per SWRCB Resolution No. 88-63.

Within Nevada, livestock water facilities or impoundments specifically developed for that use are excepted as per Nevada Water Quality Regulations 445A.120 from meeting any stricter water quality standards than for the purposes of livestock water.

(See Appendix 15 for a full explanation of the intention/interpretation of this standard.)

STANDARD 4: RIPARIAN and WETLAND SITES

Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

Meaning that:

The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

Criteria to Meet Standard:

* Riparian vegetation is vigorous and mostly perennial, and diverse in species composition, age class and life form sufficient to stabilize stream banks and shorelines.

* Riparian vegetation and large woody debris are well anchored and capable of withstanding high stream flow events.

* Negligible accelerated erosion as a result of human related activities is evident.

* Age class and structure of woody riparian and wetland vegetation are appropriate for the site.

Exceptions and Exemptions to Standard 4 (where Standard 4 is not applicable)

* Structural facilities constructed for livestock/wildlife water or other purposes are not natural wetland and/or riparian areas. Examples are: water troughs, stock ponds, flood control structures, tailings ponds, water gaps on fenced or otherwise restricted stream corridors, etc.

STANDARD 5: BIODIVERSITY

Viable, healthy, productive and diverse populations of native and desired plant and animal species, including special status species, are maintained.
Meaning that:

Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Criteria to Meet Standard:

* Wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable wildlife populations.

* A variety of age classes is present for most species.

* Vigor is adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur.

* Distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events.

* Natural disturbances such as fire are evident, but not catastrophic.

* Non-native plant and animal species are present at acceptable levels.

* Habitat areas are sufficient to support diverse, viable, and desired populations and are connected adequately with other similar habitat areas.

* Adequate organic matter (litter and standing dead plant material) is present for site protection and decomposition to replenish soil nutrients and maintain soil health.

SUSANVILLE RAC GUIDELINES FOR LIVESTOCK GRAZING

The following guidelines are meant to apply to one or more of the standards for rangeland health.

Guideline 1: A stubble height threshold will be present on all stream-side areas at the end of the growing season, or at the end of the grazing season if grazing occurs after fall dormancy. The residual or regrowth should provide sufficient herbaceous forage biomass to meet the requirement of plant vigor maintenance, bank protection, and sediment entrapment.

Utilization of stream-side herbaceous and woody plants should be limited to a specified amount of the current growth, and/or livestock should be removed to allow sufficient time for plant regrowth.

a. Late season use (summer or fall grazed pastures) requires more restrictive utilization based on site specific situations.

b. Special situations such as fragile fisheries habitats or easily eroded stream banks may require more restrictive utilization thresholds.

c. Hoof action impacts or chiseling on stream banks will not exceed specified thresholds so that stream bank stability is maintained or improved.

Guideline 2: Desired seral states will be determined through the Allotment Management Plan development process; generally the goal will be to achieve advanced ecological status in the riparian zone.

Guideline 3: Periods of rest from livestock grazing or other avoidable disturbances must be provided during/after periods of stress on the land (e.g: fire, flood, drought) and during critical times of plant growth.

Guideline 4: Plans for grazing on any allotment must consider other uses (recreation, archaeological sites, wildlife, horses and burros, mineral resource extraction, etc.) and be coordinated with the other users of public lands so that overall use does not detract from the goal of achieving rangeland health.

Guideline 5: Intensity, frequency, season-of-use, and distribution of grazing shall provide for growth and reproduction of desired plant species and the achievement of the potential natural vegetation or desired plant community.

Guideline 6: Grazing permits will include site-specific, measurable terms and conditions.

Guideline 7: Design and work towards implementation of a grazing management strategy for livestock for each grazing unit (pasture) within I (Improvement) and M (Maintenance) category allotments, to maintain or improve rangeland health. This may consist of, but not be limited to, season-of-use, rotation, or by setting utilization levels for desirable plants. Each management plan implemented will incorporate the factors necessary to maintain the health of desirable plants.

Guideline 8: Determination of grazing use by livestock must provide for the habitat requirements of fish and wildlife.

Guideline 9: Grazing management practices must sustain biological diversity across the landscape. A mosaic of seral stages, vegetation corridors, and minimal habitat fragmentation must be maintained.

Guideline 10: Take aggressive action to reduce the invasion of undesirable exotic plant species into native plant communities. The spread of noxious weeds will be controlled through appropriate methods such as grazing management, fire management, and other management practices.

Guideline 11: Prescribed fire and (natural) prescribed fire will be utilized to promote a mosaic of healthy plant communities and vegetative diversity.

Guideline 12: Grazing and other management practices shall take advantage of transitional opportunities (e.g., drought, flood, fire) to enhance or establish populations of desirable tree, shrub, herbaceous and grass species. Utilization levels will be established for desired seedlings, saplings, and/or mature plants to promote their presence in the plant community.
Guideline 13: Development of springs, seeps, and other water related projects shall be designed to promote rangeland health. Wherever possible, water sources shall be available year long for use by wildlife.

Guideline 14: Apply the management practices recognized and approved by the States of California and Nevada as Best Management Practices (BMPs) for grazing related activities to protect and maintain water quality.

Guideline 15: In watersheds draining into water bodies that have been listed or are proposed for listing as having threatened or impaired beneficial uses, and where grazing activities may contribute to the pollutants causing such impairment, the management objective is to fully protect, enhance, and restore the beneficial uses of the water.

Guideline 16: Utilization Levels

If monitoring or documented observation indicates that one of more of the standards is not being met, and if significant progress is not being made toward meeting all of those standards that are not being met, and if there is evidence that current grazing practices are causing or contributing to this unsatisfactory condition, then the following utilization levels will be applied. These utilization levels will be applied unless and until a current site-specific analysis is completed and new utilization levels are developed for specific allotments and documented in allotment management plans, other management plans, and/or in terms and conditions of grazing permits/leases.[4] New site-specific utilization levels that are developed may be more restrictive than the guidelines presented below, consistent with achieving the desired resource conditions (as prescribed in land use plans and activity plans) and progress toward meeting the standards.

Utilization of key upland herbaceous species

UTILIZATION GUIDELINES (adapted from Holechek 1988 and Holechek et al. 1995)	
Community Type	Percent of Use of Key Herbaceous Species
Salt desert shrubland	25-35
Semi-desert grass and shrubland	30-40
Sagebrush grassland	30-40
California annual grassland	50-60*
Perennial grass communities within the California annual grassland vegetation type	30-40
Coniferous forest	30-40
Mountain shrubland	30-40
Oak woodland	30-40
Pinyon-juniper woodland	30-40
Alpine tundra	20-30

[4] Only those guidelines that are applicable to making progress toward meeting the standards that are not being met need be applied. For example, if only riparian standards are not being met, then only the guidelines applicable to utilization and stubble height of riparian vegetation would be applied.

* Residual dry matter (RDM) guidelines will be used instead of these utilization levels for management of annual species in the California annual grassland. These RDM levels correspond approximately with these utilization levels. The RDM levels given in the table under Alternative 5, Ukiah RAC Recommended Standards and Guidelines (Section 2.92), will be used for those few annual allotments within the area covered by the Susanville RAC.

Utilization of key upland browse species

There will be no more than 20 percent utilization of annual growth on key browse species prior to October 1 within identified deer concentration areas.

Utilization of key riparian species

A 4-6 inch minimum stubble height will remain at the end of the growing season in most riparian areas.

There should be no more than 20% utilization on key riparian trees and shrub species in those areas where the presence of woody riparian species is necessary to meet standards.

Implementation of this guideline

1. Uplands (including perennial grass and browse communities).

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if utilization guidelines on the average of the upland key areas across the pasture (or allotment if there is only one pasture) are exceeded for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of upland key areas on the pasture (or allotment) are not to exceed maximum utilization guidelines in most years. Because of the potential long-term damage to perennial grass species associated with severe grazing, severe grazing use (>70% utilization) in any upland key area in any year will result in a management change the following year. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents. The average (mean) utilization on key species will be estimated at each key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which lower utilization levels of perennial upland species would be expected to help move these allotments toward the standards), utilization data already in hand will be used to determine whether a management change is necessary. Thus, for example, if utilization on a particular key area has exceeded the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring utilization levels within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further

management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

2. Riparian areas (including herbaceous and woody plant communities).

Management changes will be implemented (e.g., reductions in stocking rate or another management change) if stubble heights on the average of the key riparian areas across the pasture (or allotment if there is only one pasture) fall below the guidelines for 2 consecutive years or in any 2 years out of every 5 years. In addition, at least 70% of riparian key areas on the allotment are to exceed minimum stubble heights in most years. If any particular key area fails to meet the guidelines for more than 2 consecutive years, then management action will be taken to remedy the problem in the area of the allotment that key area represents.

Because stream banks may be inadequately protected by heavy use in any one year and because stubble heights below 3 inches result in cattle shifting their preference to shrubs, stubble heights below 2 inches in any one year will require a management change in the following year.

The mean stubble height on key riparian species will be estimated at each riparian key area and used to determine if the guidelines have been met. There are indications that the median may be a better statistic to use than the mean; we will calculate both statistics from the same data sets and make a determination on which statistic to use after examining the data over a period of a few years. See Appendix 20 for further discussion on this issue.

For allotments not meeting or making significant progress toward meeting the standards (and for which higher stubble would be expected to help move these allotments toward the standards), stubble height data already in hand will be used to determine whether a management change is necessary. Thus, for example, if stubble heights on a particular key area have fallen below the thresholds for the two years previous to the approval of these standards and guidelines, a management change will be implemented prior to the first grazing year following this approval. In addition to implementing management changes that are expected to bring stubble heights within threshold values, close monitoring will follow to ensure the grazing use levels are not exceeded during the grazing period following the management changes. If utilization levels are exceeded or expected to be exceeded during this period, a reduction or curtailment of further grazing in the area represented by the key area will be required for the remainder of the grazing season. In addition, further management changes will be implemented prior to the start of the next grazing season to bring utilization levels within thresholds.

Guideline 17: Rangeland monitoring to determine utilization of forage resources and trend of rangeland health will be conducted in each allotment based on current accepted practices and techniques as directed in the Interagency Technical Reference: *Utilization Studies and Residual Measurements* (1996). Monitoring methodologies will be applicable to local conditions and developed in consultation with permittees and interested publics.

Monitoring methods will be simple and easily accomplished. Permittees and others will be able to do the monitoring. BLM will be responsible for monitoring key areas.